АУЫЛ ШАРУАШЫЛЫҒЫ, ВЕТЕРИНАРИЯ ҒЫЛЫМДАРЫ ЖӘНЕ ТАМАҚ ӨНІМДЕРІН ҚАЙТА ӨҢДЕУ

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Prospects for the use of natural food additives in the production of sausage products

Abstract

Main problem: Modern manufacturers of products, by the current market conditions, should take care that their products are competitive and attractive in consumer terms, but also the economic efficiency of its production is important. In this regard, in the production of food products, including meat, the use of various additives that allow to make products with more pronounced organoleptic properties, increased shelf life, increased nutritional and biological value are used. Analyzing the products presented on the market, it was revealed that the use of food additives of chemical origin is more than common among today's manufacturers, because they allow producing products that are lower in cost by improving the taste and aroma properties of the product, using low-quality raw materials or replacing natural raw materials with artificial components. Despite the widespread use of such additives, they still remain not sufficiently studied.

Purpose: It is necessary to revise the traditional range of meat products in the country by direction of increasing the volume of production of products from natural and chopped meat with a variety of attractive organoleptic characteristics. It is a modern principle of organization and management of food industry enterprises.

Methods: In this regard, the use of new natural ingredients in the production of meat sausage products becomes an urgent task. Considering the field of food technologies, it should be noted that currently there is a tendency to increase the consumption of food enriched with natural additives.

Results and their significance: Based on our research, result was obtained showing that chemical food additives negatively affect the microflora of the gastrointestinal tract. As a result, it was decided to develop a new type of sausage products using natural additives, such as rosemary and blueberry fruits.

This article provides a justification for their use in the production of sausage products as an alternative to various chemical food additives that can have a negative impact on the human body.

Keywords: chemical food additives, sausage products, rosemary, blueberries.

Introduction

Today, there is a full development of the food industry. It is characterized by the widest mechanization and automation of production and transport processes, the use of artificial cold and vacuum technology, the latest physical methods, chemical and biological preparations to accelerate technological processes. There are a huge variety of new products. New ways of long-term preservation of products in hermetic airtight packaging are promising. Now it is possible to deliver products from almost any industry to anywhere in the world. But the main problem for the modern consumer is that today's food industry is moving by leaps and bounds in the application and addition of chemical food additives: preservatives, flavors, dyes, stabilizers, antioxidants and substitutes for raw materials.

To correctly answer the question of how to treat the use of food with food additives, it is necessary to understand and weigh the main disadvantages and advantages of using them. Advantages are that the product is better preserved, has an attractive appearance. Disadvantages are that the human body wears out, processing various chemicals, it is harmful to health. And with certain doses of use it becomes dangerous.

Everyone has their own attitude to their health and their own priorities in life. Many people have come to terms with the daily use of products with additives, but others consciously refuse almost everything in the store. But the fact that no one wants to be poisoned from an overdose of various chemicals or starve to death. Therefore, the main advice is to carefully study the composition indicated on the label of food products and know the measure of their consumption.

It is also impossible to believe blindly that the label was written with the truth. Manufacturers often use additives literally visually, which can lead to the production of a product with a dangerously higher concentration. It also happens that the manufacturer intentionally exceeds the norm in order to hide the

shortcomings of the product (stale, poor quality of raw materials) and increase the yield of the finished product [1].

The food additives added to many foods (usually designated by the code E) are predominantly harmful to the body. With moderate consumption, the use of products with E-supplements is not too harmful to the body (for example, several times a month). The situation is dangerous when a person consumes products with a large number of food additives daily or even several times a day when using various products. Nowadays, there are several hundred food additives with the code E (from E100 to E1521) [2].

Materials and methods

In this regard, the initial goal of our study was to determine the effect of dietary supplements on the human body. It is known that the human body is a macroorganism consisting of many different microorganisms and the main part of our useful microflora is concentrated in the gastrointestinal tract. Thus, the scope of research was determined to establish the effect of food additives on the microflora of the human gastrointestinal tract.

The intestinal microflora in a broad sense is a collection of various microorganisms (Table 1).

Table 1 – The content of intestinal microflora is normal

Name of the microorganism	Colony-forming units/g faeces
Bifidobacteria	10^8– 10^{10}
Lactobacilli	10^6– 10^9
Bacteroides	10^7– 10^9
Peptococci and peptostreptococci	10^5– 10^6
The Escherichia	10^6– 10^8
Staphylococci (hemolytic, plasma-coagulating)	no more than 10^3
Staphylococci (non-hemolytic, epidermal, coagulase-negative)	
Streptococci	10^4– 10^5
Clostridia	10^5– 10^7
Eubacteria	10^3– 10^5
Yeast-like mushrooms	10^9– 10^{10}
Opportunistic enterobacteria and non-fermenting Gram-negative bacilli	no more than 10^3 no more than 10^3– 10^4

According to the information presented in this table, it can be seen that the most numerous types of microorganisms in the human intestine are bifidobacteria.

Bifidobacteria are pathogenic microbes that unable to cause disease. Moreover, they can cooperate with the body, participating in protein, fat and mineral metabolism, in the production of vitamins and enzymes. In this connection, it was decided to conduct a study of this strain of microorganisms.

A change in the quantitative ratio and species composition of the normal intestinal microflora, accompanied by the development of atypical microbes for it, is called dysbacteriosis. Intestinal dysbiosis is a condition in which the number of beneficial bacteria decreases, and the number of "neutral" and "bad" bacteria increases. Quite often, these changes are temporary: beneficial microorganisms themselves restore balance. For some reason this does not happen, it is necessary to restore the microflora with the help of certain medications. Intestinal dysbiosis can cause various diseases and pathological conditions. In this regard, it becomes clear the importance of treatment and prevention of this disorder. And one of the main causes of dysbiosis is poor nutrition.

It turns out that the consumer is directly dependent on the knowledge of what he eats and how he maintains its health. After all, if we do not monitor our nutrition, it turns out that we will not monitor our health. After all, as Paul Bragg said: we are what we eat.

The initial goal of the research is to establish the effect of food additives on the microflora of the gastrointestinal tract. To do this, it was necessary to solve a number of tasks:

– study of educational, scientific and periodical literature, consideration of the cultural properties of bifidobacteria;

– to study of the properties and possible fluctuations in the acidity of the gastrointestinal tract;

– to study of the growth characteristics of bifidobacteria at various indicators of the acidity of the medium;

– to study of the effect of food additives on the growth of bifidobacteria.

Food additives such as monosodium glutamate and guar gum have attracted attention due to their widespread use.

Sodium glutamate or glutamic acid salt is a food additive and flavor enhancer. The Japanese started using sodium glutamate as a seasoning many centuries ago, getting its salt from seaweed. Currently, it is manufactured chemically, and the production volume is more than 200 thousand tons per year. On the packaging of products can be designated as "flavor enhancer", "flavor additive", E 621, E 627 or E 631. With the help of glutamate, you can mask the original taste of the product, as well as make it much tastier when it gets on the tongue; this flavor enhancer repeatedly increases the sensitivity of the receptors, making the food much tastier. Even a simple solution of salt, sodium glutamate and water give something similar in taste and smell to meat broth; and if you add more different spices, bone powder, dried vegetables and flour, you will get a gourmet dish. The harm of sodium glutamate is that, firstly, sodium glutamate strongly stimulates the appetite, and makes you eat much more than necessary. Secondly, it is addictive, and after it, ordinary food seems too bland and tasteless. But the main danger of glutamate is that it can mask the taste of a product that you would never eat – both spoiled or already rotten, and frankly chemical and tasteless [3].

Sodium glutamate is used in almost all food products, for example, in fast food, seasonings, juices, sweets, semi-finished products with meat, fish or mushroom flavor, and some broth cubes even consist of a quarter of it. In addition, glutamate is actively used in the fast-food industry. It is important to note that many restaurants can also use it both in its pure form and in the form of soy sauce, which contains a lot of sodium glutamate.

Guar gum (E-412 or guaran) is a substance used in the food industry as a stabilizer-thickener or structurer (gives the aqueous phase a viscous long texture). Guar gum slows down the crystallization of ice in frozen products, so it is often used in the manufacture of ice cream and chilled confectionery. As a stabilizer, it is widely used in the meat industry, and is also used in the production of such products as: mayonnaise, yogurt, desserts, juices, confectionery and many others. It is believed that it is practically not absorbed in the intestine and helps to reduce appetite and very effectively reduces the level of cholesterol and saturated fat in the body. Guar gum (or guaran) is obtained by extraction from the seeds of the plant Ctetragonoloba. The chemical structure of guar gum is similar to carob gum (E-410). It is a polymer compound of more than 10,000 galactose residues. A high level of galactose substitution causes the rigidity of the polymer (which increases its elasticity). Guar gum is a cost-effective stabilizer and sealer. The gum quickly hydrates in cold water and creates a viscous pseudoplastic solution with a low tensile strength, which, however, is greater than that of carob gum (E-410). Guar gum is more soluble than carob gum, and in comparison, with it is the best emulsifier. At the same time, guar gum shows quite good resistance in the processes of freezing-thawing. In combination with gum, xanthan shows synergy. It is used as an improved in bakery production, as a stabilizer for cheeses, frozen desserts and other dairy products, jams and jellies, juices, food concentrates, syrups and toppings, as a fixing agent for fats and oils, as a sealer for sauces, and even as a binding agent in the production of pet food. In addition, guar gum is used in technical production.

The conducted studies allowed us to determine the effect of the above-described food additives on bifidobacteria.

For an objective study, we decided to plant bifidobacteria on media with different pH values. Since the acidity of the large intestine of a person depends on the age, the diseases they have suffered and the characteristics of their lifestyle and diet. As a result, the microflora of the large intestine is different for each person. This difference can be expressed both in the quantitative contamination with bacteria, and in a slight difference in its species composition. Therefore, bifidobacteria, the preparation "Bifidumbacterin", were seeded on a number of media with different pH values (pH=8; pH=7, pH=6) [4].

Results

The following results are obtained:

1. On the GT1 nutrient medium (pH=8), the growth of bifidobacteria is a moderate dark brown flake-like precipitate. When stained by Gram of this culture, we saw the growth of bifidobacteria, represented by Gram-positive curved rods.

2. On the culture medium GT1 (pH=7), there is the growth of bifidobacteria, uniform throughout the medium, a pronounced turbid precipitate, whitish in color. When coloring the gram of this culture, we saw the growth characteristic of bifidobacteria. The culture was represented by Gram-positive curved sticks.

3. No growth was observed at all on the GT1 culture medium (pH=6).

Further, food additives of sodium glutamate and guar gum were added to the test tubes with grown cultures of bifidobacteria in the amount regulated by regulatory documents. After the addition of food additives, the bacteria were cultured for another day, and then the results were analyzed.

1. On the culture medium GT1 (pH=8) with the addition of guar gum, the growth of bifidobacteria changed. The sediment increased several times and acquired a characteristic whitish hue. When staining by Gram of this culture, we noted an increase in the number of bacterial cells represented by Gram-positive curved rods.

2. On the culture medium GT1 (pH=8) with the addition of sodium glutamate, the growth of bifidobacteria did not change significantly. The sediment is moderate flake-like, dark brown in color, with reduced flakes. When staining by Gram of this culture, we noted a decrease in the number of bacterial cells represented by Gram-positive curved rods.

3. The nutrient medium GT1 (pH=7) after the addition of guar gum acquired a jelly-like homogeneous consistency. The sediment increased, which caused the medium to acquire an opaque whitish hue. When staining by Gram of this culture, we noted an increase in the number of bacterial cells represented by Gram-positive curved rods.

4. On the culture medium GT1 (pH=7) with the addition of sodium glutamate, the growth of bifidobacteria did not change significantly. The sediment is moderate flake-like, whitish in color, with a clear environment in the test tube. When staining by Gram of this culture, we noted a decrease in the number of bacterial cells represented by Gram-positive curved rods.

Thus, it was found a negative effect of synthesized food additives of sodium glutamate on the microflora of the gastrointestinal tract and the human body as a whole; the positive impact of the food additive guar gum on the gastrointestinal tract and the human body as a whole. Studying the effect of medium acidity on the growth of bifidobacteria, the following result was obtained: at a pH of 7, the normal growth of bifidobacteria was established, at a pH of 8, a decrease in the growth of bifidobacteria was established, and at a pH of 6, the growth of bifidobacteria was not established.

When adding a dietary supplement of sodium glutamate to the GT1 culture medium with different pH values, a decrease in the growth of bifidobacteria was observed. When adding a food additive of guar gum to the GT1 nutrient medium with different pH values, an increase in the growth of bifidobacteria was noted.

Based on the results of research we can say about the negative effect of monosodium glutamate on the human body. Therefore, the next goal of the research was to select natural raw materials that can be used as food additives to create useful food products that have more attractive consumer properties.

Fortification of food products with essential substances is a serious intervention in the traditional structure of human nutrition. Necessity for such intervention is dictated by objective changes in the lifestyle of a modern person, in the set and nutritional value of the food products used by them. In this regard, the enrichment of sausage products with new natural ingredients is interesting and relevant scientific direction. In this regard, there are a number of aspects that have a decisive influence on the use of natural additives of plant origin in the meat processing industry. At first, there is a fairly well-formed orientation of the population towards the consumption of "healthy" food which is due to the wide dissemination of information about the theory of adequate nutrition. Secondly, the use of plant components in the production of meat products contributes improving the quality characteristics of the raw meat raw materials, increasing the nutritional and biological value of finished products. Thirdly, the constant search for more successful analogues than modified soy, so often used in the production of meat products.

Discussion

Guided by all of the above, it was decided to develop a new type of sausage product using natural additives, such as rosemary and blueberry fruits. Based on the useful properties of these types of raw materials, we can conclude that they can be used as enriching additives in the production of meat products. The resulting ingredients can be successfully used in the production of meat products as an additional source of vegetable protein, dietary fiber and other nutrients, expanding the range of meat and sausage products.

The technological scheme of production a new type of sausage product, includes standard procedures for the production of semi-smoked sausages:

– reception of raw materials;
– defrosting of frozen raw materials, temperature +20 ±2 °C, for 18-24 hours;
– cleaning of meat half-carcasses;
– cutting meat half-carcasses into cuts;
– deboning of meat cuts;
– veneering of meat and dividing it into 3 varieties;
– grinding of meat on a top, the diameter of the grate is 16-25 millimeters (in meal);
– mixing the minced meat in a minced meat mixer with salting ingredients, for 2-3 minutes;
– aging of meat in salt, at a temperature of +2 + 4 °C, for 24-48 hours;
– grinding of meat on a top, the diameter of the grate is 2-3; 6-8; 8-12 millimeters, depending on the name of the sausage;
– preparation of lard and its grinding, it should be cooled to a temperature of +2 + 4 °C or frozen to 0-3 °C;
– preparation of minced meat in a minced meat grinder in accordance with the recipe for 8-10 minutes;
– preparation of the shell;
– filling the shell with minced meat on hydraulic syringes, at a pressure that ensures the density of the loaf;
– binding loaves with twine or thread, applying paper clips to the ends of the loaves;
– precipitation, at a temperature of +4 + 6 °C, for 1-2 days;
– heat treatment in combined chambers or continuous thermal units;
– drying and roasting, at a temperature of 90-100 ° C, for 40-80 minutes, until the temperature in the loaf is 70-72 °C, and 15-20 minutes before the end of roasting, the humidity is increased from 50 to 55 %;
– smoking, at a temperature of 40-45 °C, for 6-8 hours, humidity 60-65 %;
– drying, at a temperature of 10-12 °C, for 1-2 days, relative humidity 75-78 %;

– quality control of finished products;
– packaging, labeling, transportation and storage.

In the recipe of the new type product additional components were added, such as dry ground rosemary and crushed dried blueberries.

Rosemary is an evergreen shrub with thin needle-like leaves and a pleasant aroma. Rosemary flowers and leaves are used as a spice in cooking. The fresh, slightly bitter leaves exude a clean and bright fragrance, reminiscent of a complex mixture of camphor, eucalyptus, pine and lemon. Rosemary is part of the classic French spicy mixtures of "herbs of Provence" and "bouquet of garni", on its basis a fragrant vinegar is prepared. Rosemary leaves are perfectly combined with all types of meat. It is widely used in marinating pork, lamb and rabbit meat to discourage the specific, characteristic smell of these types of meat and give it a peculiar "forest" flavor. It is very important that rosemary does not lose its flavor during prolonged heat treatment, so it can be added when frying, stewing or baking products. The use of rosemary in food helps to increase the secretion of gastric juice, improve digestion. Analyzing the results of clinical studies, it was revealed that the water infusion of the plant increases the contraction of the heart, briefly increases blood pressure, has a choleretic and tonic effect, relieves stress and nervous tension. The positive effect of rosemary water infusion (mixed with lavender) on patients in the post-stroke period was also determined, due to its property to improve brain circulation, memory and vision.

Rosemary helps with colds: its volatile substances are able to purify the air of the room from 80 % of the microbes in it. It copes well with such harmful microorganisms as staphylococcus, streptococcus, escherichia coli and yeast fungi. Rosemary leaves and annual shoots were used in folk medicine inside for amenorrhea, as an astringent, tonic for impotence; sedative - for nervous disorders in the menopausal period; analgesic - for pain in the heart and stomach colic and externally - for neuritis, thrombophlebitis, rheumatism, mumps, whites, as a wound-healing agent.) [5].

Nutritional value per 100 grams of edible part:
– calorie content – 331 kcal;
– protein – 4.88 g;
– fat – 15.22 g;
– carbohydrates – 64.06 g;
– dietary fiber – 42.6 g;
– ash – 6.53 g;
– water – of 9.31 g;
– saturated fatty acids – 7,371 g.

Vitamins per 100 grams of edible part:
– vitamin A (retinol equivalent) – 156 mcg;
– vitamin B1 (thiamine) – 0.514 mg;
– vitamin B2 (riboflavin) – 0.428 mg;
– vitamin B6 (pyridoxine) – 1.74 mg;
– vitamin B9 (folic) – 307 mcg;
– vitamin C – 61.2 mg;
– vitamin PP (Niacin equivalent) – 1 mg;

Macronutrients per 100 grams of edible part:
– calcium – 1280 mg;
– Magnesium – 220 mg;
– sodium – 50 mg;
– potassium – 955 mg;
– phosphorus – 70 mg.

Trace elements per 100 grams of the edible part:
– iron – 29.25 mg;
– Zinc – 3.23 mg;
– Copper – 550 mcg;
– manganese – 1,867 mg;
– selenium – 4.6 mcg.

Blueberry is a shrub up to 30 cm high, having spherical fruits, at the top with the rest of the calyx in the form of a ring border, in the center of a dimple. The flesh of the berries is black and purple in color. The taste is sweet and astringent. Blueberry berries in the form of a decoction, jelly is used as an astringent for acute and chronic disorders of the gastrointestinal tract, accompanied by diarrhea, dyspepsia associated with increased fermentation and putrefaction processes, colitis, enterocolitis, dysentery. Blueberry decoctions are used topically for stomatitis and gingivitis as an astringent and antiseptic.

Blueberry berries are used as a dietary and therapeutic remedy for cystitis, mild forms of diabetes mellitus. The leaves and shoots used for diabetes, because they contained glycoside nemertean has the ability to lower the levels of glucose in the blood.

Berries are consumed fresh, dried and in the form of infusions. The infusion is used for gastrointestinal diseases, diabetes, used for inflammatory diseases of the oral cavity and pharynx for rinsing. Blueberry berries

are widely used in food as a delicacy, for making jams, compotes and jelly. It is used for scurvy, hypovitaminosis. The positive effect of blueberries (fresh, dried, in the form of decoction, infusion, juice, etc.) on visual acuity was noted. Externally, fresh decoctions of blueberries are used in the treatment of ulcers and burns.

Blueberries contain up to 12 % tannins of the pyrocatechin group; up to 7 % of organic acids, including citric, malic, succinic, quinic, benzoic, lactic, oxalic; up to 30 % of sugar, 60 % of ascorbic acid, 0.75-1.6 % of carotene, 0.04 % of vitamins of group B. Blueberries contain 6 % of sodium, 51 % of potassium, 16 % of calcium, 6 % of magnesium, 13 % of phosphorus, 7 % of iron, manganese. Seeds contain up to 31 % of fat oil, up to 18 % of protein. Sodium benzoate is also found in large quantities in blueberry berries, it has preservative effect for humans, which is used in the food industry. The preservative properties of the substance are based on the suppression of the reproduction of microscopic organisms, prevents the development of moldy fungi and yeast. The content of sodium benzoate was the main reason for the introduction of blueberries in a new type of sausage product. Nutritional value per 100 grams of edible part:

– calorie content – 44 kcal;
– protein – 1.1 g;
– fat – 0.6 g;
– carbohydrates – 7.6 g;
– dietary fiber – 3.1 g;
– organic acids – 1.2 g;
– water – 86 g;
– mono-and disaccharides – 7.6 g;
– ash-0.4 g.

Vitamins per 100 grams of edible part:

– vitamin PP – 0.3 mg;
– vitamin B1 (thiamine) – 0.01 mg;
– vitamin B2 (riboflavin) – 0.02 mg;
– vitamin C-10 mg;
– vitamin E (TE) – 1.4 mg;
– vitamin PP (Niacin equivalent) – 0.4 mg.

Macronutrientsin 100 grams of the edible part:

– calcium – 16 mg;
– magnesium – 6 mg;
– sodium – 6 mg;
– potassium – 51 mg;
– phosphorus – 13 mg.

Trace elements – 100 grams of the edible part:

– iron – 0.7 mg.

Taking into account the composition and properties of the studied plant additives, the calculation of the recipe with the optimal ratio of ingredients for the production of a new type of sausage product was carried out, which is presented in Table 2.

Table 2 – Recipe for a new type of sausage product

Name of raw materials, spices and materials	Quantity, %
Pork ham prepared	63,45
Fat	19,03
Beetroot extract, liquid	12,69
Garlic, fresh, peeled, minced	2,22
Dried blueberries, crushed	1,27
Table salt, food grade	0,64
Black pepper fragrant ground	0,38
Ground red sweet pepper	0,16
Dry ground rosemary	0,16

During the experiment, a product was obtained that meets the requirements that were defined for a new type of sausage product. Namely, the complete elimination of chemical food additives and organoleptic properties of the finished product is not inferior to the analogues offered to the consumer and nutritional properties of the finished product was improved by adding natural ingredients such as rosemary and blueberries.

Conclusion

Thus, the following objects of research were used: bifidobacteria, as the main type of microorganisms representing the intestinal microflora; food additives (sodium glutamate, guar gum); vegetable components (rosemary, blueberry fruits), as the supposed natural additives for the production of a new type of sausage product.

For the experiment bifidobacteria were taken from the drug "Bifidumbacterin", which is a dried microbial mass of live bifidobacteria (bacteria that are part of the normal intestinal microflora) with the addition of a bifidogenic (promoting the growth of bifidobacteria) factor lactose.

The food additives sodium glutamate and guar gum were chosen for the experiment, due to the widespread use in the food industry in the production of food products, including meat, on the modern market.

Rosemary and blueberry fruits were used to improve the organoleptic properties of a new type of sausage product. The new type of sausage product was compared in composition and properties with the control product, which was selected as a product prepared using traditional technology.

Analyzing the conducted studies of the effect of food additives on the human body, which were conducted on the microflora of the gastrointestinal tract, the negative effect of chemical food additives was proved. This was expressed by a decline in the growth of the studied microorganisms. Based on the obtained conclusion, a new type of sausage product was developed using plant components that serve as a substitute for chemical food additives, to improve the organoleptic and physico-chemical properties of the finished product. In general, this allowed us to make the consumer properties of the product more attractive.

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Шұжық өнімдерін өндіруде табиғи тағамдық қоспаларды қолдану перспективасы

Қазіргі нарықтық жағдайды ескере отырып, қазіргі заманғы өнім өндірушілер өздері шығаратын өнімнің бәсекеге қабілетті және тұтынушылық жағынан тартымды екендігіне назар аударуы керек. Сондай-ақ оны өндірудің экономикалық тиімділігі де маңызды болып табылады. Осыған байланысты тамақ өнімдерін, соның ішінде ет өндірісінде әртүрлі қоспалар қолданыла бастады, бұл органолептикалық қасиеттері айқын, сақтау мерзімі ұзартылған, тағамдық және биологиялық құндылығы жоғары өнімдер жасауға мүмкіндік береді. Нарықта ұсынылған өнімді талдай отырып, химиялық тектес тағамдық қоспаларды қолдану бүгінгі өндірушілер арасында кең таралғандығы анықталды, өйткені олар сапасыз шикізатты пайдалану немесе табиғи шикізатты жасанды компоненттерге ауыстыру кезінде өнімнің дәмдік-хош иісті қасиеттерін жақсарту есебінен өзіндік құны бойынша төмен өнім шығаруға мүмкіндік береді. Мұндай қоспаларды кеңінен қолдануға қарамастан,олар әлі де жеткілікті зерттелмеген.

Сондықтан елде дәстүрлі түрде қалыптасқан ет өнімдерінің ассортиментін әртүрлі тартымды органолептикалық сипаттамалары бар табиғи және туралған ет өнімдерін өндіру көлемін ұлғайту жағына

қарай қайта қарау қажет – тамақ өнеркәсібі кәсіпорындарын ұйымдастыру мен басқарудың заманауи қағидаты.

Осыған байланысты ет, дәлірек айтқанда шұжық өндірісінде жаңа табиғи ингредиенттерді қолдану өзекті міндетке айналады. Азық-түлік технологиясы саласын ескере отырып, қазіргі уақытта табиғи қоспалармен байытылған тамақ өнімдерін тұтынудың өсу тенденциясы байқалғанын атап өткен жөн.

Химиялық тағамдық қоспалардың әсері туралы жүргізілген зерттеулер негізінде Химиялық тағамдық қоспалар асқазан-ішек жолдарының микрофлорасына теріс әсер ететіндігін көрсететін нәтиже алынды. Нәтижесінде розмарин мен көкжидек сияқты табиғи қоспаларды қолдана отырып, шұжықтың жаңа түрін жасау туралы шешім қабылданды.

Бұл мақалада адам ағзасына теріс әсер етуі мүмкін әртүрлі химиялық тағамдық қоспаларға балама ретінде шұжық өндірісінде оларды қолдану негіздемесі келтірілген.

Түйін сөздер: Химиялық тағамдық қоспалар, шұжық өнімдері, розмарин, көкжидек.

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Перспективы применения натуральных пищевых добавок в производстве колбасных изделий

Учитывая сложившиеся рыночные условия, современные производители продукции должны заботиться о том, чтобы выпускаемая ими продукция была конкурентоспособной и привлекательной в потребительском отношении. Но также не маловажным является и экономическая эффективность её производства. В связи с этим в производстве пищевых продуктов, в том числе и мясных, стали использовать различные добавки, которые позволяют создать продукцию с более выраженными органолептическими свойствами, увеличенными сроками хранения, повышенной пищевой и биологической ценностью. Анализ представленной на рынке продукции показывает, что применение пищевых добавок химического происхождения более чем распространено у сегодняшних производителей, ведь они позволяют выпускать продукцию более низкую по себестоимости за счет улучшения вкусо-ароматических свойств продукта, при использовании некачественного сырья или замены натурального сырья на искусственные компоненты. Несмотря на повсеместное использование таких добавок, они остаются недостаточно изученными.

Поэтому необходимо пересмотреть традиционно сложившейся в стране ассортимент мясопродуктов в сторону увеличения объемов выработки изделий из натурального и рубленого мяса с разнообразными привлекательными органолептическими характеристиками – современный принцип организации и руководства предприятий пищевой промышленности.

В связи с этим актуальной задачей становится применение в производстве мясных, а точнее колбасных, изделиях новых натуральных ингредиентов. Рассматривая область пищевых технологий, следует отметить, что в настоящее время наблюдается тенденция роста потребления продуктов питания обогащенных натуральными добавками.

На основании проведенных нами исследований о влиянии химических пищевых добавок был получен результат, показавший, что химические пищевые добавки негативно влияют на микрофлору желудочно-кишечного тракта. В результате чего было принято решение разработать новый вид колбасного изделия с использованием натуральных добавок, таких как розмарин и плоды черники. В данной статье дано обоснование их применения при производстве колбасных изделий как альтернативы различным химическим пищевым добавкам, которые могут оказывать негативное влияние на организм человека.

Ключевые слова: химические пищевые добавки, колбасный продукт, розмарин, черника.

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